The AGRICULTURAL EDUCATION Magazine

VOLUME 33 OCTOBER, 1960 NUMBER 4

UNIVERSITY OF MINNESOTA LIBRARY RECEIVED JUN 13 1960

ture legend, page 81

Featuring—Keeping Pace with Developments in Agriculture

The Agricultural Education Magazine

A monthly magazine for teachers of agriculture. Managed by an editorial board chosen by the Agricultural Section of the American Vocational Association and published at cost by Interstate Printers and Publishers, Danville, Illinois.

THE INTERSTATE DANVILLE, ILLINOIS

MANAGING EDITORS

A. H. Krebs, University of Illinois, Urbana, Illinois
Editor

W. A. Smith, Cornell University, Ithaca, New York
Consulting Editor

Henry TenPas, Oregon State College, Corvallis, Oregon
Business Manager

SPECIAL EDITORS

CENTRAL
Ralph J. Woodin, Ohio State University, Columbus, Ohio
R. J. Agan, Kansas State University, Manhattan, Kansas

NORTH ATLANTIC
Joe P. Bail, Cornell University, Ithaca, New York
Wallace H. Elliott, U. of Maine, Orono, Maine

PACIFIC
S. S. Richardson, Utah State College, Logan, Utah
Howard Christensen, University of Nevada, Reno, Nevada

SOUTHERN
J. C. Atherton, University of Arkansas, Fayetteville, Ark.
T. W. Gandy, Alabama Polytechnic Institute, Auburn, Ala.
A. J. Paulus, University of Tennessee, Knoxville, Tenn.

AT LARGE
Robert Howey, Sycamore, Illinois
Teachers
Carl F. Lamar, U. of Kentucky, Lexington, Kentucky
Book Reviews
H. N. Hunsicker, U. S. Office of Education, Washington, D. C.
Vocational Division

SPECIAL REPRESENTATIVES

Central, Harold B. Taylor, Indianapolis, Indiana
Pacific, Ralph W. Canada, Fort Collins, Colorado
Southern, S. L. Sparkes, Nashville, Tennessee
North Atlantic, Cola D. Watson, Montpelier, Vermont
N.V.A.T.A., George Buchanan, Frankfort, Kentucky

EDITING-MANAGING BOARD

Harold B. Taylor, Indiana; Ralph W. Canada, Colorado; S. L. Sparkes, Tennessee; Cola D. Watson, Vermont; George Buchanan, Kentucky; W. T. Spanton, Washington, D. C.; G. P. Deyoe, Illinois; Julian Carter, New York; Henry TenPas, Oregon; W. A. Smith, New York; A. H. Krebs, Illinois.

Contents

Editorials

From the Editor's Desk 75

Future Themes 75

Four Years and Seven Cows Later ..... F. J. Miller 76

A School Farm in Adjusting Local Program ..... Emery P. Booska 78

How Can Vocational Agriculture Adjust to the Changes in Farming? ..... O. E. Thompson 79

Agriculture Departments Are Meeting the Needs of Students ..... J. Cordner Gibson 80

The Cover Picture 81

Adjusting Local Programs to Changes in Agriculture ..... George P. Deyoe 82

Training for Non-Farm Agricultural Occupations ..... Raymond M. Clark 84

Suggestions for Improving Your FFA ..... H. Palmer Hopkins 89

Father-Son Meeting ..... Norman D. Howe 90

My Guidance Activities ..... Donald G. Robinson 90

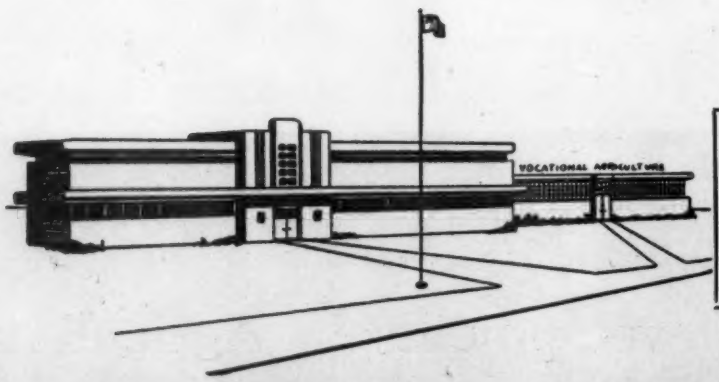
A Letter to Congressman Jones ..... George R. Loughead 91

Helping Farmers Keep Up-to-Date ..... Thomas V. Abercrombie 93

Vo-Ag Leadership in Community Development ..... Paul Roy and Sam Dale 94

Book Reviews 95

Stories in Pictures 96



Subscription price, $2.00 per year, payable at the office of the Interstate Printers and Publishers, 19-27 N. Jackson St., Danville, Illinois. Foreign subscriptions, $2.25. Single copies, 20 cents. In submitting subscriptions, designate by appropriate symbols new subscribers, renewals and changes in address. Contributions should be sent to the Special Editors or to the Editor. No advertising is accepted.

Second-class postage paid at Danville, Illinois.

Editorials

From the Editor's Desk . . .

Needed—Sound Planning, Hard Work and Optimism.....

To many persons, keeping abreast of changes in agriculture means simply keeping up-to-date with new developments in the production aspects of agriculture. While keeping up-to-date with new production developments is important, it is also true that this is an almost automatic process if proper teaching procedures are used. In addition, most of our best efforts in the field of teaching aids deal with providing technical agricultural information. Of much greater importance than the production information from the vocational agriculture teacher's standpoint are the problems of keeping abreast of major shifts in farm planning and properly interpreting the agricultural situation for the people of his community.

Keeping abreast of the major changes in farm planning involves the trend toward increasing specialization in farming. More intensive instruction will be needed on some enterprises as they become more important to the farm income picture. Trends in farming leading to the introduction or loss of enterprises must be closely followed and even anticipated. Changing market conditions and possibilities must be under constant study. In other words, teachers of vocational agriculture are faced with a greater problem in terms of providing leadership for agricultural change than in the teaching of current production practices.

The interpretation of much of the information available about agriculture leaves much to be desired and appears to have been left largely to persons not having the best interests of the agricultural worker at heart. Teachers of vocational agriculture could well devote time to helping the people of their communities understand the total agricultural situation as it affects them. For example, people generally should be aware that farms are not going to disappear. One Illinois teacher discovered that there has been little increase in farm size in his community in recent years. Some farmers question the need for increase in farm size and prefer to concentrate instead on reducing costs of operation—an angle of attack on the farm problem which may result in greater profits than trying to save labor for which there is no market. The trend toward smaller farm families should also be noted. We may soon be turning to nonfarm youth for our future farm labor and management supply if our farm youth enter nonagricultural fields of endeavor. Since the economic well-being of all people is so closely tied together, agricultural facts and opinions such as the foregoing need to be interpreted for the people in the towns and villages as well as for the farmers.

The teacher of vocational agriculture needs to be concerned with much more, then, than changes in agricultural production techniques. He needs to be concerned with the broader picture of agricultural change and the impact of this change on the lives of all the people in his community. Failure to recognize and respond to this responsibility is at least partially responsible for the generally unfavorable attitude toward agriculture existing today in the minds of both nonagricultural and (unfortunately) agricultural workers. Citizens generally are ready, willing and able to help search for and report the facts on the local agricultural situation to their communities. However, leadership must be provided, and if it is to be provided in any extensive amounts, it will have to come from teachers of vocational agriculture. Let's get to work and really get abreast of the changes in agriculture for today and tomorrow. It is still possible to make some things come true through sound planning and hard work, plus a little old fashioned optimism.□

FUTURE THEMES

November—Keeping Pace with Developments in Education

December—Policy Formation in Agricultural Education

January—Evaluating the Farm Mechanics Program

February—Relationships Among Agricultural Education Agencies

March—A Modern Philosophy for the FFA

April—Guidance for Students in Vocational Agriculture

Four Years And Seven Cows Later

F. J. MILLER, Vo-Ag Instructor, Oshkosh, Wisconsin

Floyd Miller

Where state highway 41 crosses 44 in Winnebago County, you will see a set of farm buildings flanked by a herd of purebred Guernsey cows. That's how you will know you are looking at the Walter Wood and Son's farm near Oshkosh.

It was in the year 1951 when son George entered the Oshkosh High School and enrolled in vocational agriculture. He immediately became interested in the Future Farmers of America, which he headed four years later. That year he was awarded the Wisconsin Farmer degree for excellence in the agriculture field. His farming program consisted of a purebred Guernsey springing heifer and a small Guernsey calf which he acquired as a 4-H member in a local 4-H Club. Four years later he owned seven purebred Guernsey cows, two heifers, and several calves. In addition to this program in dairy production, he rounded out his farming program with several acres of oats, corn, legumes, and pasture crops. Today, after completion of his two-year obligation to Uncle Sam, he is actively in partnership at home with his parents.

George Wood is just one of the thousands of boys in Wisconsin and the nation who have completed vocational agriculture training and are now engaged in farming. Here the writer is reminded of a young man by the name of Ronald Jones, son of Mr. and Mrs. Lloyd Jones of Route 4, Oshkosh, who started his farming program with a Sears Roebuck Foundation Chester White gilt which was given to him while he was enrolled in his local 4-H Club. After that humble start he enrolled in high school, and five years later he had a $19,000 equity in his father's farm business of raising over 300 hogs, also beef, sheep, and dairy cattle. His program brought state recognition in 1956 and the American Farmer degree in 1957.

It all started 40 years ago on February 13, 1917, when the Smith-Hughes law was enacted. The Smith-Hughes program has served Wisconsin since its inception. Vocational agriculture in our state is an organized systematic educational program designed for persons who are already farming or are preparing to enter farming. The training is conducted by Smith-Hughes trained agriculture instructors in our high schools and vocational schools throughout the nation.

Ronald Jones receives plaque during the local future farmer banquet, for outstanding work in agriculture on his home farm. Since this picture was taken, Ronald received the American Farmer Degree at Kansas City last fall. Ronald is at the right.

The legend has it that when Jack the Giantkiller traded off his old brown cow for a handful of beans, his mother thrashed him and sent him off to bed without supper. She tossed the beans out of the window. By morning they had taken root and had grown to the second-story window height. As Jack watched in amazement, the bean stalk grew and grew. So has the popularity and growth of the vocational agriculture program in Wisconsin mushroomed during the past four decades.

Today, Wisconsin ranks as one of the leading states in supervising over 296 agriculture departments in the high school and vocational schools in the state. This core of schools is instructed by 299 agriculture instructors. The farm boys and young farmers enrolled in these classes provide an average enrollment of 62 people.

George Wood receives trophy from local FFA president for excellence in his farming participation. His parents are seated at the table.

George Wood receives trophy for excellent Guernsey cow exhibit at the State Junior Dairyman's Association convention. The trophy is presented by the president of the state Association.

The vocational agriculture program is set up on a four-year institutional basis with an out-of-school program for young and adult farmers in the school area. The course of study includes such courses as weeds, seeds, plant study, animal husbandry, metal and woodwork, and farm machinery and tractor repairs. The 60 to 90 minute classroom period is divided into recitation and supervised study areas. The farm shop is provided to help the student put into practice the work covered in the classroom.

Daily Herd Improvement

Perhaps one of the most effective programs of work in the agriculture department is the dairy herd improvement work conducted in the home herds but supervised in the local department. Realizing that over 50% of the farm income in Wisconsin is derived from dairying, much emphasis is put on milk testing and general dairy herd improvement through culling out the poor cows which are producing less than 300 pounds of butterfat per year, by feeding a balanced ration according to production, and breeding for better type and production. So enthusiastic has the program been that today there are over 25,000 cows on test by the farm boys in the state. These boys are members of the Wisconsin Junior Dairyman's Association.

Young Farmers' Association

Young and adult farmer classes have long been popular in Wisconsin agricultural communities. For many years Wisconsin has led the nation in the number of young (out-of-school) farmers enrolled in part-time agriculture classes. The out-of-school evening classes run for a period of 15 or more weeks during the winter months. Many young farmer groups organize to form a chapter or association, as the Oshkosh Y.M.A.A. and Young Men's Agriculture Association.

Farm classes for adult farmers are also organized for older farmers who wish to increase their knowledge and skill in farming. Much time is also devoted to current problems in agriculture, farm records, income tax, and social security as well as acquiring a better understanding about the government and farm programs. Over 5,000 adult farmers were enrolled and instructed by the agriculture instructors in our state last year.

The Agriculture Instructor

The agriculture instructor has a full program in the school and community. He should have a background of a lifetime experience on the farm. He must have a degree in agricultural education, and he is employed on a 12-month basis by the local board of education. He must attend an annual summer workshop of one week duration and continually strive to professionally improve himself by attending summer sessions on another campus. He is expected to give full time to his work of teaching the all-day agriculture classes, teaching the part-time and adult farmer classes, counseling his advisees, supervising the dairy herd improvement program and acting as adviser to the local Future Farmer chapter.

The vast agriculture training program is locally assisted by federal and state support under the formerly called Smith-Hughes bill and the local state legislature. Last year Wisconsin received about $388,000 from the Federal Government and $52,000 through our state legislature appropriation. The contract of the instructor runs from July 1st to June 30th the following year. Most of the instructors in Wisconsin are members of the National Agriculture Instructors Association, which had its birth in 1948.

The Future Farmers of America

The Future Farmers of America, which has often been called the mouth piece for vocational agriculture, was organized in a national convention at Kansas City in 1928. It is an organization of farm boys enrolled in the local agriculture classes in school. The organization has four degrees of accomplishment in reaching the top in the skill of farming as follows: The Green Hand Degree, The Chapter Farmer Degree, The Wisconsin Farmer Degree, and The American Farmer Degree. Few boys reach the latter degree. Today the 280 Future Farmer Chapters in Wisconsin have over 14,000 members in their local chapter.

Do Farm Boys Farm?

It is the obligation of both the parents and the students to understand that the instruction in the classroom is directed to help them become established in farming. These students need guidance and counseling along the way to make their decisions early in life. With parental cooperation and teacher guidance, they should each year conduct supervised farming programs related to the type and scope of farming in their communities. They should be encouraged to develop leadership, speaking skill and good managerial practices. In a special Masters study made in 1948, the writer found that out of the 103 boys studied in Winnebago County, 71 entered farming. They listed the factors which influenced them to go into farming as:

1. Advice from agricultural teacher 86%
2. Influence of parents 94%
3. Influence of successful farmers 82%
4. Desire for an independent life 99%
5. Parents helped me to get started 93%
6. Interested in farming ..100%

On the other hand, the 32 boys who chose to enter nonfarming occupations said some of the factors which influenced them were:

1. Lacked the capital to get started 75%
2. Felt unprepared to start farming 59%
3. Did not have the opportunity to carry a good farming program 56%
4. Lacked interest in farming 44%
5. Parents not cooperative in helping get started 6%

From the above data it can readily be observed that the guidance offered by the agriculture instructor and the influence of the parents and successful farmers in the community have had a great deal to do with the making of the decisions of the boy in favor of farming. On the other hand, the lack of a good farming program and the feeling of insecurity in farming, coupled with lack of interest and capital, influenced one-third of the boys not to enter farming.

A similar study in Pennsylvania revealed that 63% of the vocational agriculture graduates from 1916 to 1957 are permanently engaged in farming. Another 21% are occupied in related fields.

The writer is convinced that proper training in agriculture coupled with the interest and cooperation of the boy and his parents will do much to help prepare and establish the boy or young man in farming or related agriculture.

Through the efforts of part-time schools for young farmers who are out of school, the Agriculture Department has done much to bridge the gap between formal all-day classroom instruction and becoming established in farming. □

Teacher finds need for—

A School Farm in Adjusting Local Program

EMERY P. BOOSKA, Vo-Ag Instructor,
Hudson, New Hampshire

Emery P. Booska

We are all aware that agriculture is becoming more of a science with each passing day. We also know that the farm numbers are decreasing, but production is not being affected due to the intensified farming practices on those remaining. It is also a known factor that the demands of this great industry are far-reaching and create numerous job opportunities in related fields of agriculture.

It is in these changing times that we will realize the full value of the school farm. Those of us who have a school farm are aware of its potential in providing the background and farming experiences for the agriculture student from non-agricultural areas. We cannot assume that all the positions in farming and its related fields are going to be filled by rural farm youth, the youth with a true farming background. We must be ready to meet the ever-increasing demand for milk inspectors, plant managers, soil scientists, research and development engineers, and a host of others.

There are of course a number of disadvantages to a school farm, but I feel that the advantages more than compensate for any hardships that may arise due to the farm. *The Agricultural Education Magazine* has published a few articles in the past pertaining to the school farm. However, I feel that the topic is important enough to give it more serious thought. As with anything else, the school farm can vary in size, scope, etc. It may range from a few acres of land with the vo-ag instructor and students handling all the labor and management problems to a farm that is large enough to support a number of enterprises and have a full-time farm manager.

Superintendent of Schools, Louis Ramsey, is shown accepting for the school farm, chains and number tags for all the farm animals. Roger Nolin, Past President of the Alvirne FFA Chapter, is presenting the gift in behalf of the Alvirne Chapter.

It does not really matter what the arrangement is, they all can serve much the same purpose. That purpose is to provide students that do not have a home farm with a place to gain farming experience of some nature; to provide them with the opportunity to handle equipment and become proficient in applying practices learned in the classroom.

Numerous departments lose good student material each year because the parents and students involved feel that developing a project or getting a good placement job is just too much of a problem. Why shouldn't we keep these students? A school farm would help solve their problems.

Yes, you *can*, and should, use farms in your community for field trips and other purposes, but are you always at liberty to do what you want? Can you always arrange the time, transportation, etc? Can you actually "place" all your students to meet requirements?

Some of these problems are eliminated by having a school farm. Notice, I said *some*. I do not wish to give the impression that a school farm is the remedy or cure-all for all of our problems. However, it can be a real "shot-in-the-arm" for many of our agriculture departments throughout the country.

We must, in many areas and communities, face the fact that our departments cannot survive on just farm youth alone. There are just not enough to work with in many cases. Therefore, we should look toward the "town" or "city" student. We know that many are interested in agriculture or in its related fields. Let us provide these students with the opportunity to enroll in vocational agriculture and have the program in the school provide them with at least the minimum background experiences required by our colleges and all occupational fields related to agriculture.

We have a rather unique set-up here at Alvirne High School in Hudson, New Hampshire, in that the farm was left to the town to be run in conjunction with its Vocational Agriculture Department. An advisory committee was formed with the Vo-ag instructor acting as Farm Supervisor. We have a full-time manager to actually operate the farm. All students who do not live on a farm or who cannot get satisfactory placement meet their requirements for the course on the school farm. The number of hours vary per student from 100 to over 600 per year. All students have the opportunity to work at various enterprises which include dairy, poultry, forage crops, vegetable gardening, and forestry. These enterprises provide the students with ample opportunity to work with records and to cope with numerous managerial problems. The farm equipment is more than enough

to keep the winter mechanics program going.

The term "school farm" defies criticism. In practice it is a great morale booster for both instructor and student; it develops interest and pride in doing good work on the part of the student and is an excellent public relations medium. □

How Can Vocational Agriculture Adjust To the Changes in Farming

O. E. THOMPSON, Teacher Education, U. of California

Orville E. Thompson

Not many years ago the farmer was usually owner, manager, purchasing agent, marketing specialist, and over-all decision-maker for his own farming operation. Many looked to and envied the farmer, for here was one vocation where a man could be his own boss. He set his own working hours, could take time off at his own discretion, could, within reason, do as he pleased. As recently as ten to twenty years ago, that seemed generally true to the superficial observer. Whether true or not then, is the farmer—once the symbol of independence—still the king of his own farm operation? The study reported on herein indicates that his role may be changing. If so, what are the implications for vocational agriculture?

This study, conducted by representatives of the Department of Education, University of California at Davis, was designed to measure the influence that one group of off-farm specialists—fertilizer company representatives—have upon decisions that until recently were made exclusively by the farmer.

Two California counties, Yolo and Stanislaus, were selected for study because they contain substantial acreages of field crops (dryland and irrigated), row crops, fruit and nut crops, and forage crops—a good representation of fertilizer-using crops in California. These counties contain both small- and large-scale farming operations. There is reason to believe that the findings from these two counties reflect practices in other California counties with similar farming conditions. Furthermore, one might expect the same general results from a study on pesticides, such as fungicides or herbicides, instead of fertilizers. There are also indications that the changes brought to light are occurring in varying degrees on a nation-wide basis.

Data were collected in personal interviews with farmers and individuals who advise farmers on fertilizer use: representatives of fertilizer companies, food processors, loan agencies, and service agencies such as Agricultural Extension Service and private agricultural consultant firms. Interviews were conducted with 81 individuals representing 42 fertilizer companies, 22 food-processing concerns, 12 service agencies, 5 loan companies, and 45 farmers. Coverage of the agencies in the two counties was nearly complete, whereas the farmers interviewed were only a small sample of the total farm operators. Farmers contacted were clients of the agencies whose representatives were interviewed. They were well-established farmers who produced substantial acreages of the major farm crops in the area. Farmers were contacted to cross-check certain information obtained from the agency representatives.

Separate interview forms were used for farmers and agency representatives. In each case the data were to help determine the following:

1. The extent to which farmers rely on others to make decisions relative to fertilizer practices to follow.
2. What influence fertilizer dealers and others think they have on the fertilizer practices farmers use.
3. How farmers feel they are influenced by these agency representatives.
4. Whether there is a difference between farmers operating small acreages and large acreages in sources relied on in obtaining assistance in determining fertilizer practices to use.
5. The sources that company representatives and farmers rely on for technical information.

Findings

Certain of the findings have general implications for persons involved in education in agriculture. The reader is reminded that these findings are limited to the responses of 81 agency representatives and 45 farmers in two California counties:

1. Fertilizer agency representatives reported that only one-third to one-half of the farmers contacting them know the kind and amount of fertilizer they should use.

2. About 90 per cent of the farmers purchasing fertilizers asked for information on kind and amount to use, proper placement, and proper time of application.

3. Fertilizer agency men reported that three-fifths of the farmers follow their recommendations exactly. Another one-fourth use them with slight modifications. Thus, nearly all of the farmers in this study followed the recommendations of the fertilizer agency representative to some degree.

4. No difference in sources of information or degree of dependence on the judgment of fertilizer dealers was found between farmers operating large and small acreages. Likewise, no major differences in this regard were found between Yolo and Stanislaus Counties.

5. Farmers rated fertilizer company representatives as their main source of information. Almost three-fifths of the farmers listed the fertilizer fieldman as their primary source of information; others mentioned fertilizer salesmen and crop fieldmen. Farm advisors were sources of information for about two-fifths of the farmers.

6. The customary mass media—newspapers, radio, and television—were not important sources of information for these 45 farmers.

7. The primary sources of technical

information for agency representatives were personnel of the College of Agriculture of the University of California and the Agricultural Experimental Stations, together with materials developed by these institutions. Technical journals and company research were other important sources of information.

8. Farmers in this sample were convinced of the benefits of using fertilizers. Of the 45 farmers, 42 used fertilizers regularly; the other three used fertilizers occasionally.

9. Both the farmers and the agency representatives in this study were reasonably well-schooled groups. Of the agency representatives, over four-fifths had some college training, with over one-half holding 4-year college degrees. Only one had not graduated from high school. Of the farmers, about one-fourth were college graduates. About one-tenth had not graduated from high school.

10. Fertilizer agency representatives were found to have had extensive experience with fertilizer problems. Over one-fifth had more than twenty years of experience; three-fifths had five to twenty years. Likewise, these men had extensive tenure with their present employers. One-fifth had over twenty years with the same company, while only one-fourth had fewer than five years. The 55 per cent remaining had five to twenty years with the present employer. The farmers had an average tenure of 25.4 years in farming.

Implications of This Study to Teachers of Vocational Agriculture

1. It is important to educators in agriculture that only one-third to one-half of the farmers know the kind and amount of fertilizers to use and that 90 per cent ask for fertilizer information. If farmers are to protect themselves from possible exploitation by suppliers of goods and services they perhaps need to be provided educational programs on fertilizers and soils that will serve as a basis on which to judge the recommendations of fertilizer agency personnel. Teachers of vocational agriculture can take an active part in providing such programs.

2. The degree of reliance these farmers placed upon fertilizer dealers has further implications for vocational agriculture. Twelve well-established vocational agriculture departments operate in those two counties. Yet almost two-thirds of the farmers did not know the fertilizer requirements of their crops. Perhaps schools need to do a better job in teaching the fundamentals of soils and plant nutrition to both in-school and out-of-school groups.

3. Since off-farm specialists in agriculture are in demand, it behooves the teacher of agriculture to encourage boys to prepare for these vocations. A college degree in agriculture is basic to many of these positions; therefore one of the objectives of the vocational agriculture program needs to be preparation for advanced study of agriculture in college.

4. Traditionally, adult programs sponsored by the teacher of agriculture have been primarily for farmers. Is there any reason why these couldn't include fertilizer fieldmen, consultants, and others working with farmers? Many of these men could be used as instructors in adult programs on soils and plant nutrition. Further, since Agricultural College personnel were found to be important sources of information, they should be used as instructors or resource persons for adult programs.

5. Since there was little difference between farmers operating large and small acreages in the degree of reliance on fertilizer dealers for advice, adult programs planned by teachers of agriculture should include both. There has been a mistaken assumption that farmers with large acreages need less help than farmers with small acreages.

6. The usual mass media of communication are not relied on extensively by either farmers or fertilizer agency representatives. Therefore the teacher of agriculture should capitalize on direct contact for communication with these individuals. Emphasis needs to be placed on group meetings and personal contacts.

7. These farmers were convinced of the advantage of the use of fertilizers. If this is true in your community, you can stop selling farmers on a need for fertilizers and concentrate on teaching them the kind and amount to use, proper placement, and time of application.

Each teacher of agriculture must study his community continuously in order to know the real situation in agriculture. If off-farm specialists are becoming more numerous and important in your community, adjust your program accordingly. The key to your effectiveness as a teacher will be how well you know your community and how well you exploit the teaching resources at your command. In the classroom you need continuous emphasis on the fundamental principles that will be the basis upon which the future farmers can evaluate the recommendations they receive from these specialists. The increase in off-farm specialists in agriculture should strengthen your program in agriculture and increase the need for agricultural education in your community—not lessen it, as some would have you believe. □

Agriculture Departments Are Meeting The Needs of Students

J. CORDNER GIBSON, Teacher Education,
California State Polytechnic College

Agriculture Departments *are* meeting the needs of students in the school community. This conclusion is based on a survey of fifteen selected agriculture departments throughout California during this past year. The primary purpose of the survey was to find out what the Agriculture Departments are doing in regard to the following: (1) how guidance and counseling procedures operate in the selection of the agriculture students, (2) how the needs of the more capable or potential college students as well as the needs of the less capable students are being met, and (3) what is being offered in the agriculture courses of study.

It is very evident there is no one general pattern that is adaptable to every community. Each agriculture department is developing its own specific program which is being geared to meet the needs of students in each of their respective communities. A definite effort is being made in these selected departments to upgrade the agricultural science instructional program to more definitely meet the needs of the varying abilities of the students. Some of the methods employed by one or several of the departments to meet the specific needs of their students are outlined below:

1. With all levels of ability in the same class, the instruction is geared to the level of the more capable students. The less capable student does the best he can with the instructor giving extra help.
2. With students of all abilities in the same class, a greater level of performance is expected of the more capable students. More complete answers to questions and more complete reports are required. These students are challenged to do more outside reading, study deeper into a problem, and undertake extra projects even to the extent of doing some semblance of minor applied research.
3. Two-year terminal programs are designed for the less capable student and the more capable students continue into an advanced two-year program.
4. The material heretofore included in the senior year is now given in the junior year, the material in the junior year is given in the sophomore year and much of the sophomore work is given in the freshman year. In the senior year more advanced technical agriculture is stressed. Management aspects of agriculture, marketing, economics, and prices are also stressed.
5. Advanced technical information is included in the junior and senior years. Units are developed on advanced work in soils, fertilizers, sprays, insecticides, genetics, and breeding as well as units on applied basic chemistry and physics.
6. Classes are segregated on the basis of interests and facilities. Students who come from farms and have facilities for supervised practice programs are enrolled in vocational agriculture. Students who do not have facilities for ownership type of projects on a farm are enrolled in suburban agriculture and carry experience types of projects in their program. Students who have just an interest in and an appreciation for agriculture are enrolled in urbiculture or agricultural arts.
7. In one senior high school situation every sophomore may elect vocational agriculture but at the end of the first semester if he cannot develop a supervised practice program for one reason or another, he then enrolls in agricultural arts. The junior year provides two options, one for the more capable college preparatory student who enrolls in vocational agriculture, and the second for the less capable student who enrolls in a course in farm practice. The senior class is made up of the more capable college-bound students who enroll in vocational agriculture. Any student interested in agriculture may elect work in agricultural arts. A special class in ornamental horticulture is offered for the mentally retarded student interested in agriculture.
8. In areas where junior colleges have agriculture curricula, a coordinated program is being developed between the high school agriculture program and the junior college agriculture program. This provides for meeting the needs of the more capable student who desires to continue his education beyond the high school level of education.

In general, the material covered in the various courses of study were somewhat similar but were adapted to agriculture in the community and the needs of the students. The usual approach is to include the basic knowledge and fundamentals of production agriculture. The more general aspects were included in the first two years, and the more technical and scientific in the last two years. More management, economics, and scientific technical information is included in the senior year.

In the area of guidance and counseling procedures in the selection of agriculture students, most of the departments have developed coordinated programs with the counselors in the elementary schools as well as in the high school. Definite effort is made to work with the eighth grade boys to explain the program of agriculture. Varying methods are utilized in these contacts such as talks by staff or agriculture students, films, brochures, school farm visits, and school fairs and open houses.

In some cases there is absolute control in the selection of the agriculture students. Optimum class size is agreed upon with the school administration and the students are selected up to this number. In most cases, before a student is enrolled in agriculture by a counselor, approval is secured from the agriculture department.

Working understandings are being developed between the counselors and the agriculture instructors. Joint meetings are held locally and sectionally, tours are conducted, and individual visits are made in order to appraise the counselors of the agriculture program. In some schools the agriculture instructor serves as a member of the counseling staff.

The more aggressive agriculture departments are adjusting their programs to more nearly meet the needs of the varying abilities of the students enrolled in agriculture. Courses of study are being upgraded to challenge the more capable students. Cooperative working relationships are evolving between the counselors and agriculture instructors for the best interests of the students. □

The Cover Picture

Corn is king in Central Indiana Agriculture. Ward Wilkins & Son are "out front" in modern farming methods on a 620 acre farm near Linden, 20 miles south of Purdue University. Each year approximately 300 of these high yielding acres of corn are field shelled and dried. Much of it is fed to cattle. Another good "father-son" arrangement.

(Photo by J. C. Allen and Son, West Lafayette, Indiana)

Teachers who are professionally alert (1) subscribe to and read

The Agricultural Education Magazine

and (2) encourage their administrators to read selected articles.

Adjusting Local Programs To Changes in Agriculture

GEORGE P. DEYOE, Teacher Education, University of Illinois

George P. Deyoe

Teachers and others responsible for vocational education in agriculture are faced constantly with the challenge to keep pace with rapid changes in agriculture.

To what extent are instructional programs in some of the better-than-average departments being adjusted to changes in agriculture? What are some of the activities of teachers in making adjustments? What are some of the recent changes in the over-all programs in these departments? What are some of the sources of help and special problems in making adjustments? Answers to these questions should be helpful to other teachers in much the same way that the farming activities of good farmers provide useful suggestions for other farmers.

Study of Adjustments in Selected Departments

A study was made recently in Illinois to determine some of the adjustments to changes in agriculture and methods of making adjustments in selected departments of vocational agriculture.* Data were secured from 30 departments considered to be above average in the programs provided. All departments had programs which included instruction for young farmers or adult farmers, or both, and the teachers in these departments had periods of tenure of several years in the schools represented.

How Data Were Secured

The data were secured through interviews focused on lists of items, initially prepared with the help of technical specialists in the College of Agriculture, University of Illinois, on various enterprises and major phases of farming. These items consisted of practices and concepts which were new or otherwise considered currently important in making adjustments in farming. Each teacher indicated for individual items whether or not they were included in recent or current instruction for high school students and for out-of-school farmers taught. The extent to which the instruction in these items resulted in changes in farming programs of the persons enrolled was also estimated. Future intentions relative to instruction in these items were also secured from each teacher. In addition, each teacher provided information on his activities in making adjustments, recent changes made, and special problems and sources of help in making adjustments.

In the case of enterprises which were regional in importance in the state, consideration was given to this fact in making the computations, since the departments included were widely distributed geographically. This applies to most of the livestock enterprises and to wheat and soybeans.

Findings Related to Enterprises and Major Phases of Farming

In Table I, a summary is shown of the extent to which the items for seven enterprises have been included in instruction for high school classes and classes for out-of-school farmers.

In general, in the instruction for high school classes and classes for out-of-school farmers (young farmers and/or adult farmers) the coverage of items in the various enterprises has been quite inclusive. This is shown by the fact that approximately three-fourths of the total items for all enterprises have been included in the instruction in 75 per cent or more of the departments.

In livestock enterprises, items omitted by more than 25 per cent of the departments in instruction for high school classes or classes for out-of-school groups, or both, pertain to selecting and improving, feeding, and maintaining health. Examples of specific items thus omitted are using backfat probes in selecting swine breeding stock, using performance records in selecting beef breeding stock, considering possibilities of cross-breeding for market milk production, considering possibilities of early weaning of pigs, using injectable iron to prevent anemia in pigs, controlling cattle grubs by use of systemics, and using silage in feeding brood sows.

Few items of general significance in crop enterprises have been omitted by more than 25 per cent of the departments in instruction for all groups. Examples of items so omitted in instruction for either or both groups are using narrow-row planting of soybeans, band seeding of legumes with recommended fertilizer placement, and using "zero" grazing.

The extent to which changes in farming programs have resulted from instruction in each enterprise was based on items applied by each group that received instruction. These findings are summarized in Table II.

In five of the seven enterprises, more items were applied to farming programs in 25 per cent or more of the departments by out-of-school farmers than by high school students. In the other two (beef cattle and corn) equal numbers were applied by both groups. Items not applied to the livestock enterprise, to the extent indicated, represent some of the newer practices in selecting and improving livestock, feeding, and health. In crop enterprises, examples of practices less frequently applied by either or both groups are narrow-row planting of soybeans, minimum tillage in corn, and band seeding of legumes.

Table I. Extent to Which Items for Enterprises Have Been Included in Instruction

		High School Classes		*Classes for Out-of-School Farmers*	
Enterprise	*Total No. of Items in List*	*No. Included by 75% or More of Depts.*	*No. Omitted by More Than 25% of Depts.*	*No. Included by 75% or More of Depts.*	*No. Omitted by More Than 25% of Depts.*
Swine	26	19	7	19	7
Beef cattle	17	9	8	9	8
Dairy cattle	18	16	2	16	2
Corn	15	14	1	14	1
Wheat	13	11	2	10	3
Soybeans	5	3	2	5	0
Forage crops	10	6	4	1	9
TOTALS	104	78	26	74	30

*A study by the author, entitled *Adjusting Local Prorgams of Vocational Education in Agriculture to Changes in Agriculture*, Division of Agricultural Education, University of Illinois, 1959.

Table II. Extent to Which Items for Enterprises Were Applied to Farming Programs

Enterprise	Total No. of Items in List	No. of Items Applied to Farming Programs in 25% or More of Depts.	
		High School Students	Out-of-School Farmers
Swine	26	8	10
Beef cattle	17	4	4
Dairy cattle	18	5	9
Corn	15	6	6
Wheat	13	5	6
Soybeans	5	2	4
Forage crops	10	3	5
TOTALS	104	33	44

Table III. Extent to Which Items for Major Phases of Farming Have Been Included in Instruction

Phase of Farming	Total No. of Items in List	High School Classes		Classes for Out-of-School Farmers	
		No. Included by 75% or More of Depts.	No. Omitted by More Than 25% of Depts.	No. Included by 75% or More of Depts.	No. Omitted by More Than 25% of Depts.
Soils	12	12	0	12	0
Farm Mechanics	18	15	3	9	9
Marketing	14	9	5	9	5
Farm Management	36	34	2	32	4
TOTALS	80	70	10	62	18

Table IV. Extent to Which Items for Major Phases of Farming Were Applied to Farming Programs

Phase of Farming	Total No. of Items in List	No. of Items Applied to Farming Programs in 25% or More of Depts.	
		High School Students	Out-of-School Farmers
Soils	12	10	9
Farm Mechanics	18	5	10
Marketing	14	5	7
Farm Management	36	3	8
TOTALS	80	23	34

The extent to which the items in four major phases of farming have been included in instruction is shown in Table III.

The coverage of items in the four selected phases of farming has been very comprehensive with the exception of marketing in instruction for both groups and farm mechanics in classes for out-of-school farmers.

Items in marketing most commonly omitted in instruction for both groups are related to some broad aspects of marketing such as finding new uses for farm products, interpreting changes in the consumer's dollar received by farmers, and studying changes in locations of major markets.

Items in farm mechanics most commonly omitted in instruction for out-of-school farmers include adjusting, repairing and maintaining farm machinery; adjusting and maintaining tractors; and maintaining electric motors.

In farm management, items most commonly omitted in instruction for both groups are transferring farm property by farm people and adjusting a farm operation to part-time farming.

Changes in farming programs by groups who received instruction in the four major phases of farming are summarized in Table IV.

In the case of farm mechanics and farm management, twice as many items were applied to farming programs of out-of-school farmers as for high school students, to the degree shown in Table IV. For both groups which received instruction, the carry-over to farming programs was greatest for soils and lowest in farm management. However, some of the items in farm management were of a type which could not be applied directly to farming.

Most of the teachers indicated that many of the items in most enterprises and major phases of farming will be given increased emphasis in future instruction for both groups.

Activities of Teachers in Making Adjustments and Recent Changes in Programs

The teachers in the 30 departments studied have engaged in various activities in making adjustments in the local programs of vocational agriculture. The activities mentioned most commonly are (1) conducting local surveys of various kinds, (2) using data and information available from various sources, (3) studying opportunities for establishment in farming, (4) studying opportunities in non-farm agricultural occupations, and (5) providing guidance for education in colleges and universities.

The teachers indicated many kinds of changes which had been made recently to improve local programs. These include (1) changes in methods of teaching, (2) changes in programs for young and adult farmers, (3) improved facilities for teaching, and (4) changes in FFA activities.

In 28 of the 30 departments, major changes have been made in facilities for teaching. These include new reference materials and changes in classroom, shop, and shop equipment. In 16 of the 30 departments, new building facilities have been provided recently, with completely new facilities for 11 of these.

Changes in FFA activities varied greatly among the departments and included addition of demonstration and trial plots on farms and school land, development of more specific programs of work, more participation in production contests, more emphasis on cooperative activities, and decreased emphasis on some types of contests low in educational value.

Sources of Help and Special Problems in Making Adjustments

Teachers in the 30 departments reported various sources and methods helpful in making adjustments. About half indicated the use of local advisory groups and individual types of self-improvement activities. Other sources and methods mentioned frequently were Vocational Agriculture Service (University of Illinois), commercial sources, local farmers, and Division of Agricultural Education (University of Illinois).

These teachers indicated a wide variety of problems and concerns in adjusting local programs of vocational agriculture to changes in agriculture. Many indicated problems in securing up-to-date references and teaching

aids. Nearly all of the teachers expressed problems in developing "know-how" about recent changes in agriculture and keeping themselves up to date. The phase most commonly mentioned in this connection was farm mechanics.

Everything considered, it can be said that these better-than-average teachers are doing a creditable job in their departments in adjusting programs of vocational agriculture to changes in agriculture. Each program has strengths as well as some aspects which could be improved considerably, and these differ somewhat among departments.

Most of these teachers look upon changing conditions as a challenge and recognize that "school is never out" for them in their efforts to keep pace with an ever-changing agriculture. □

Training for Nonfarm Agricultural Occupations

RAYMOND M. CLARK, Teacher Education, Michigan State University

Raymond M. Clark

"Training for related occupations" has been the theme for many columns in magazines dealing with agricultural education. It has also been a major topic of conversation in groups of vocational education leaders wherever they have come together. These writers and speakers contend that it is the function of the vocational agriculture program to provide training for workers in nonfarm agricultural business as well as training for farming.

Some have felt that the program in vocational agriculture should be modified to include the training necessary for employment in agricultural business and/or industry including farming, but that the "supervised farming" aspects of the program should be broadened to allow employment in any agricultural business.

A different idea is held by those who insist that the program of vocational agriculture should be held strictly to "training for farming" and that the students who are planning to enter some other type of agricultural business should not be permitted to enroll in the vocational agriculture program. Some of those who support this point of view feel that nonfarm agricultural business may wish to employ vocational agriculture graduates and that they will do so because these graduates have experience and training in farming which is needed for success in their business.

Before differences such as these can be resolved, it is necessary to find out what is required of managers and workers in these businesses. What skills, abilities and understandings must be possessed by people engaged in these occupations? Are people engaged in nonfarm agricultural business required to perform certain skills or do they need only a "talking knowledge" of these items? What kind of training do the people who are engaged in these occupations believe can be offered by the public schools to assist in initial employment or advancement in the business.

This study presents information to help answer some of these questions. Data were obtained in 45 selected Michigan communities through the cooperation of local teachers of vocational agriculture and their advanced high school classes.

Letters were written to the teachers of vocational agriculture in the selected schools describing the project and asking if a representative could come to their school to discuss the problem with the advanced class in vocational agriculture. In some cases the class consisted of a combination of juniors and seniors.

When the visit was made to the school, the project was described to the teacher and the class together and a demonstration interview was conducted. Purposes of the study were described to the students and they were invited to participate by interviewing managers and workers in the nonfarm agricultural business of the community. Teams of students were assigned to visit each of these and to conduct the interviews, using interview sheets which were left at the school.

In each case the students were asked to interview the manager. The manager was asked to name the job qualifications of workers in his business. He was then asked for his reaction to questions regarding the skills, abilities, and understandings required of him as manager of the business. He was also asked for his opinion concerning the function of the public school in training managers and workers for his business. The opinion of the manager concerning the skills, abilities, and understandings required of workers in each of the job classifications was recorded by the interviewer.

Permission was secured to interview at least one worker in each of the job classifications. When these interviews were conducted the workers were asked to indicate the skills, abilities, and understandings they felt were characteristic of workers in their job classification.

Table 1 shows the number and kind of businesses represented in the study. This sample should not be considered representative of all the nonfarm agricultural business of the state.

The same form of interview sheet was used so that data were secured showing responses of managers about managers, managers about workers, and workers about workers. Data from these interviews should be useful at local levels in assisting school administrators and teachers to adjust programs, or to introduce new training programs, to prepare people for initial employment or for promotion in agricultural business.

Table 1.

NUMBER OF BUSINESSES FROM WHICH DATA WERE GATHERED

Kind of business	Number	Kind of business	Number
Farm Machinery	59	Distr. Petroleum Prod.	9
Farm Elevators	53	Banks	5
Meat Packing	12	Greenhouse	4
Hardware	14	Fertilizer Sales & Application	4
Lumber	11	Insurance	4
Creamery, Cheese and Milk Processing	10	Electrical	4
		Misc. - (3 or fewer of a type)	24
		Total:	213

Analysis of Data

A research assistant was assigned to visit the departments of vocational agriculture to discuss plans for the project. The teacher and students were asked to list all of the agricultural businesses in the area served by the school. Yellow pages of the phone book were used to identify some of these, but in most cases they were listed on the basis of the

knowledge of the students about their own communities.

In a study of nonfarm agricultural business, Sutherland* found that the ideas of managers about duties of their workers was often different from the ideas of the workers about what was expected of them. In the present study, data will be presented to show three kinds of responses:

1. Managers' responses about duties and responsibilities of managers.
2. Managers' responses about duties and responsibilities of workers.
3. Workers' responses about duties and responsibilities of workers.

We have summarized the data for all types of business in which interviews were secured. For example, the skills and abilities and the need for training for such business as "farm machinery sales and service," "farm elevator," "feed stores," "hardware stores," and others have been combined in our summary. It was felt that the local school administrator would need to use a similar analysis of his community to decide what programs to offer. There would not be enough people to offer specific programs for one type of business in any one community.

Performance of Farm Skills and Abilities

"Does he actually need to perform certain farm skills in connection with his work?" was asked of managers about managers; of managers about workers; and of workers about workers. Table 2 indicates that more than one-half of the persons in each group are actually required to perform certain farm skills. A somewhat higher percentage of managers than of workers are required to perform farm skills.

Table 3 shows the per cent of those performing specified kinds of farm skills. This percentage is of the number in Table 2 who are required to perform the skills. For example, of the 63 per cent of managers who are required to perform certain farm skills, 55 per cent must perform skills in the area of butchering and meat cutting. While the list represents only a sampling of areas in which skills may be required, it serves to indicate the relative importance of these areas in the communities represented in the study. It should not be concluded that the percentages in the table indicate relative importance of the skills for a specific individual. The individuals who are required to perform skills in butchering and meat cutting probably consider these more important to them than skills in the area of farm mechanics. However, teachers and school administrators should recognize a need for farm mechanics by a greater number of persons than for butchering and meat cutting.

The question is sometimes raised as to the frequency with which managers or workers are required to perform specific skills. Many feel that if a skill is rarely required it is less important to offer training for it than if individuals are required to perform the skill frequently. Table 5 indicates that a very large proportion of those who are required to perform skills must perform them frequently.

One of the problems facing school administrators is that of providing suitable equipment for vocational training purposes. In this study, participants were asked to indicate the major machinery and tools they used in the performance of their work. Table 6 indicates the per cent, in each of the three categories, using some kind of machine or tool. Also, for those who use some kind of tool or machine, the per cent using specific machines or tools is indicated. For example, 89 per cent of the managers indicated that workers in their business use some kind of tools or machines. Sixty-three per cent of this group use an adding machine, nearly 22 per cent use a computer and only 3.5 per cent use a welder.

Table 2. NEED TO PERFORM CERTAIN FARM SKILLS

	Managers about managers	Managers about workers	Workers about workers
Total number	178	128	290
No response (per cent)	14.7	9.0	16.7
Do not need to perform (per cent)	25.3	39.0	32.0
Need to perform (per cent)	63.0	53.1	51.3

Table 3. KINDS OF FARM SKILLS REQUIRED TO PERFORM

	Managers about managers	Managers about workers	Workers about workers
Total response	178	128	290
No response (per cent)	37.0	46.9	48.7
Required to perform (per cent)	63.0	53.1	51.3
Number no response to "yes" * (per cent)	1.7	0.0	1.0
Skills or abilities required			
Farm mechanics	55.0	58.8	46.6
Dairy	25.7	14.7	19.9
General feeding	24.8	13.2	21.2
Butchering & meat cutting	0.9	1.5	0.7
Livestock judging	0.9	1.5	0.7
Farm crops	6.4	4.4	3.4
Shop	38.5	30.1	35.6
Plant propagation	1.8	4.4	0.7
Chemical spraying of crops	1.8	1.5	0.0
Electrical equipment	0.0	4.4	0.7
Farm management skills	2.8	2.9	1.4
Poultry disease	2.8	0.0	0.0
Meat curing and cutting	0.0	0.0	0.0.
Egg candling	0.0	1.5	0.7
Poultry processing	0.0	1.5	0.0

* Per cent is of those responding.

Table 5. EXTENT TO WHICH SKILLS ARE PERFORMED ON THE JOB

	Managers about managers	Managers about workers	Workers about workers
Total number	178	128	290
Not required to perform skill on the job (per cent)	2.8	11.7	7.2
Required to perform skill on the job (per cent)	97.2	87.5	91.7
Frequency of performance on the job (per cent)			
a. Frequently	89.0	93.8	83.4
b. Occasionally	9.8	6.3	6.6
c. Rarely	0.7	0.0	1.4

*Sutherland, S. S., and O. E. Thompson. The Training Required by Workers in Agricultural Business and Industry in California, Report of a Study; Sacramento; California State Department of Education, 1957. 40 pp. plus appendix not numbered.

For the purpose of discovering the importance of aspects of business practice which may be required of managers and workers, they were asked, "Are managers and/or workers required to perform some kind of business activities such as filing and writing sales slips?" For those who answered in the affirmative, another question was asked, "which of the following activities or abilities are managers and/or workers required to perform?"

Table 7 indicates the percentages in each case. The table should be read as follows: Ninety-eight and nine-tenths per cent of managers stated that managers must perform some of the business activities listed. Of these, 64.2 per cent must do filing; 89.8 per cent write sales slips; and 97.7 per cent must meet customers.

"To what extent is farm management data needed by managers and workers in nonfarm agricultural business?" is often asked by teachers of vocational agriculture. Teachers may ask, "Does a tractor salesman actually use farm management data to help a customer decide on the proper size tractor for his farm?" or "Does the fertilizer salesman help the farmer customer analyze the relation of fertilizer application to return per dollar spent for fertilizer?" Table 8 indicates the responses of participants in this study to questions regarding their need for ability to use farm management data.

The participants were asked if farm management data actually were prepared by managers or workers. If so, they were asked, do these individuals perform this task frequently, occasionally, or rarely? Table 9 indicates the per cent of responses for each question. The table should be read as follows: Sixty and nine-tenths per cent of managers stated that workers must actually make decisions regarding farm management. Of these, 56.4 per cent make these decisions frequently; 33.3 per cent occasionally; and 10.3 per cent rarely. A similar statement can be made for responses of managers about managers and of workers about workers.

Value of Training

Responses regarding the value of training for initial employment, for the present job, for promotion in the business, and for changing to another business in the same family of jobs were secured as part of each interview. As in the foregoing tables, the responses of managers about managers, of managers about workers, and of workers about workers were secured.

In each case respondents were asked to indicate the value of training as: no value, little value, valuable, very valuable, or indispensable. In Tables 13-16, the per cent indicating either "indispensable" or "very valuable" have been combined. The combined percentage in each case is based on the number responding to the specific item. Therefore, each item is based on a different number of responses. The tables may be read as follows: For initial employment, 86.7 per cent of managers who responded felt that mathematics training is either very valuable or indispensable for initial employment. Only 67.2 per cent of managers felt this to be true about workers,

Table 6. MACHINERY AND TOOLS USED IN PERFORMANCE OF SKILLS AND ABILITIES

	Managers about managers	Managers about workers	Workers about workers
Total number	178	128	290
No response (per cent)	6.7	10.9	13.8
Using machine or tool (per cent)	93.3	89.1	86.2
Using machine or tool indicated (per cent) *			
a. Adding machine	86.7	63.2	53.2
b. Feed grinder	22.3	18.4	27.6
c. Computer	30.7	21.9	20.0
d. Power saw	22.9	17.5	20.8
e. Lathe	12.7	10.5	10.4
f. Hand tools	51.2	50.0	56.4
g. Typewriter	9.6	15.8	14.8
h. Cash register	1.8	0.9	2.8
i. Welder	0.6	3.5	2.4
j. Power tools	14.5	16.7	11.6

*Per cent is of those using the machine or tool.

Table 7. BUSINESS ACTIVITIES ACTUALLY PERFORMED

	Managers about managers	Managers about workers	Workers about workers
Total number	178	128	290
Number not performing (per cent)	0.6	4.7	6.6
Performing some activities (per cent)	98.9	95.3	93.1
Business activities performed (per cent)			
a. Filing	64.2	49.2	43.7
b. Write sales slips	89.8	73.8	73.0
c. Keep inventory records	80.1	58.2	43.7
d. Write sales letters	68.8	43.4	26.3
e. Meet customers	97.7	91.8	92.6
f. Compute costs	82.4	59.8	43.7
g. Estimate jobs	70.5	45.9	37.4
h. Bookkeeping	67.0	49.2	35.2
i. Record receipt of goods	78.4	52.5	47.4
J. Work in sales room	70.5	39.3	38.1
k. Purchase and price	1.1	0.0	0.0
l. Advertise and display	0.6	0.8	0.0
m. Personnel	1.1	0.0	0.0

Table 8. NEED ABILITY TO USE MANAGEMENT DATA

	Managers about managers	Managers about workers	Workers about workers
Total responses	178	128	290
Per cent of total needing to use management data	63.5	52.3	37.2
Per cent of those who use management data who use indicated items:			
a. When to buy equipment or a tractor	41.6	41.8	30.6
b. When to remodel barn	17.7	20.9	13.0
c. How much fertilizer is profitable	54.9	44.8	50.9
d. Type and size of equipment	3.5	1.5	1.9
e. Feeding and rations	12.4	10.4	14.8
f. Conservation	0.9	0.0	0.0
g. What varieties are profitable	4.4	4.5	0.9
h. Plant growing	3.5	4.5	3.7
i. Spraying times	2.7	0.0	0.9

and 59.6 per cent of workers felt this to be true about workers.

The per cent indicating that training is "indispensable" or "very valuable" for initial employment is shown in Table 13.

Table 13 provides some clues as to the training the high school should offer to prepare students for initial employment. Note that mathematics, English, public relations and customer relations rate high in importance while salesmanship and science are much less important at the initial employment level.

An examination of Tables 14, 15 and 16 shows little change placed on the value of training in mathematics, English, public relations and customer relations. They are still important elements in the training program for people engaged in these businesses. On the other hand, training in science and salesmanship are much more important for promotion in the business than for initial employment.

An examination of the responses regarding accounting, farming skills, hand tool operation, and machine tool operation indicates little change in the value placed on the training needed for the present job, for promotion or for changing jobs. Managers indicated that managers need training in farming skills for initial employment in 41 per cent of the cases; for present job in 44.1 per cent of cases; for promotion in 47.6 per cent of cases; and for changing to other business in the same family of occupations in 48.1 per cent of cases. These responses indicate that training for initial employment is about all of the training needed in the areas of accounting, farming skills, and hand and machine tool operation.

Training in salesmanship and in science is needed particularly at the adult level since the importance of these is much greater for promotion than for initial employment.

Summary and Conclusions

This study has demonstrated a practical method for use by local schools to identify training needs of workers in nonfarm agriculture business in the community. The data indicate that:

1. Managers and workers in these businesses needed both manipulative skills and management abilities in agriculture.
2. More managers and workers need skills and abilities in areas of public relations and customer relations than in farming and use of hand tools.
3. Managers and workers in nonfarm agricultural business need training for initial employment and for advancement in business.
4. Training in farming skills and tool operations are important for initial employment and training in science and salesmanship are rel-

Table 9. FREQUENCY WITH WHICH WORKERS ACTUALLY NEED TO MAKE MANAGEMENT DECISIONS

	Managers about managers	Managers about workers	Workers about workers
Total responses	178	128	290
Does he actually make decisions (per cent No.)	32.6	39.1	52.1
(per cent Yes.)	67.4	60.9	47.9
Frequency of decision making by those who make decisions (per cent)			
a. Frequently	63.3	56.4	54.0
b. Occasionally—	31.7	33.3	39.6
c. Rarely	6.7	10.3	6.5
No response to question on frequency (number)	2	6	14

Table 13. PER CENT OF THOSE RESPONDING WHO INDICATED TRAINING IS "INDISPENSABLE" OR "VERY VALUABLE" FOR *INITIAL EMPLOYMENT*

	Managers about managers	Managers about workers	Workers about workers
Mathematics	86.7	67.2	59.6
English	57.4	43.5	43.6
Accounting	56.3	34.2	31.1
Farming skills	41.0	29.1	25.9
Public relations	72.9	55.3	56.1
Salesmanship	16.4	6.3	11.0
Science	16.4	6.3	11.0
Hand tool operation	35.4	34.0	32.6
Machine tool operation	27.1	25.9	33.9
Customer relations	80.2	69.9	64.6

Table 14.

PER CENT OF THOSE RESPONDING WHO INDICATED TRAINING IS "INDISPENSABLE" OR "VERY VALUABLE" FOR THE *JOB NOW HELD*

	Managers about managers	Managers about workers	Workers about workers
Mathematics	86.7	67.2	59.6
English	63.6	54.0	46.3
Accounting	71.0	42.0	36.2
Farming skills	44.1	33.9	26.3
Public relations	87.1	64.6	62.8
Salesmanship	91.5	61.5	57.0
Science	21.5	10.5	13.9
Machine tool operation	39.8	35.0	37.3
Machine tool operation	31.5	32.1	37.3
Customer relations	92.6	78.3	73.7

Table 15. PER CENT OF THOSE RESPONDING WHO INDICATED TRAINING IS "INDISPENSABLE" OR "VERY VALUABLE" FOR *PROMOTION IN THE BUSINESS*

	Managers about managers	Managers about workers	Workers about workers
Mathematics	87.7	73.6	74.5
English	75.9	66.3	59.9
Accounting	79.7	56.7	79.1
Farming skills	47.6	39.2	37.5
Public relations	89.0	78.6	73.9
Salesmanship	93.1	69.7	68.4
Science	31.9	16.7	23.2
Hand tool operation	34.8	35.1	34.0
Machine tool operation	30.6	32.0	36.5
Customer relations	91.7	83.0	79.3

Table 16. PER CENT OF THOSE RESPONDING WHO INDICATED TRAINING IS "INDISPENSABLE" OR "VERY VALUABLE" FOR *JOBS IN OTHER BUSINESS IN THE SAME FAMILY*

	Managers about managers	Managers about workers	Workers about workers
Mathematics	81.3	71.1	66.8
English	67.0	58.4	52.6
Accounting	69.2	43.2	40.8
Farming skills	48.1	31.0	33.8
Public relations	80.8	64.3	68.4
Salesmanship	84.5	64.0	63.7
Science	27.1	17.8	20.2
Hand tool operation	33.1	31.4	36.1
Machine tool operation	30.9	23.5	36.4
Customer relations	82.9	77.0	78.0

atively of greater importance for promotion in the business.

5. There is need for training at both the high school and adult levels.

This study did not determine specifically what subject matter is needed in each of the areas where training is needed. When the training program is undertaken, representatives of the school and of the business may work together to determine specifically what is needed. For example, 47.6 per cent of the managers indicated that training in mathematics for initial employment is indispensable. Does this mean training in simple arithmetic, algebra, geometry or calculus? This will need to be determined for specific businesses in the community.

The study has indicated the great need for adult education. If it is assumed that training for "promotion in the business" or for transfer to other jobs in the same family represents need for training at the adult level, the study indicates greater need for adult education in these areas than for training at the high school level. Communities need to decide where this training is to be provided. Will it be offered in the community college, in area vocational schools, in the adult education programs of present school districts or by some other agencies?

The need for training cuts across many of the subject matter areas we commonly label as "General" and "Vocational." These include work in English, mathematics, science, agriculture, bookkeeping, trades, and industrial arts. If the school could discard much of its traditional organization of subject matter, perhaps a program of training for nonfarm agricultural business could be organized. It would incorporate the subject matter fields in a new relationship. It might offer a vocational program including areas of agriculture, business, shop, mathematics, science and others in one course adapted to the needs of workers or prospective workers in the agricultural business segment of the community.

In view of our traditional patterns, it is more practical to meet the needs of students within the frame work of present patterns. What can vocational agriculture contribute? What stake has business education, industrial arts, trade and industry, science and mathematics, in the training of people for initial employment or for advancement in the business?

What Is the Contribution of Vocational Agriculture?

The data indicate that well over half of those interviewed agree that they must perform some kinds of farm skills. These include skills in farm mechanics, dairy, livestock, crops and many others. The kind of farm skills required varies with the kind of business and probably varies with the kind of farming area. For example, more than 25 per cent of the managers agreed that they must be able to compute rations for dairy cows. This might not be true in a nondairy area.

Ability to use farm management data to help in computing costs, planning budgets and making decisions such as purchasing machinery, remodeling buildings and applying fertilizers are also required of a substantial portion of those interviewed.

The FFA program may make a contribution to the training and experience of young men who will enter agricultural business. The development of abilities in leadership and cooperation are important aspects for successfully meeting the requirements of supervision, salesmanship and human relations.

Vocational agriculture has a contribution to make to training of workers in these businesses. More than two-thirds of the managers rated training in farm skills as valuable or indispensable for initial employment in their business. Approximately the same proportion indicated training in farm skills as valuable to indispensable for promotion in their business.

What Is the Contribution of Business Education?

Salesmanship, handling personnel and operating office machines are examples of skills and abilities included in training for business. Two-thirds of the managers indicated that they and their workers must have skills and abilities in some of these areas. Ten to fifteen per cent of the managers indicate that they and their workers need skill in typewriting. The business skills and abilities actually performed by managers and workers are listed in Table 7. Other skills and abilities not listed may also be important in some situations. When a specific program is planned for a group, this would need to be determined.

Managers and workers were near agreement in their evaluation of the need for training in accounting, public relations, salesmanship and customer relations. A fairly high percentage of managers feel that both managers and workers need training in these fields for both initial employment and for promotion in the business. The need for training at both the pre-employment and the adult levels is indicated here as well as in vocational agriculture.

What Is the Contribution of Training in Trades and Industry or Industrial Arts?

Operation of power saw, lathe, welder, power tools and use of hand tools is required of from one per cent to more than one-half of the managers and their workers. Some individuals may contend that these abilities may be developed in the vocational agriculture program. However, it may be that these skills and abilities might better be given in an industrial arts or trade program. If a very high degree of skill is required in a specialized program, perhaps the training would be more appropriately given in a trade class. On the other hand, the data show that more than 50 per cent of managers and workers need the ability to use hand tools. Perhaps training for this is appropriate to the industrial arts program in our schools.

Science, Mathematics, English

In spite of the recent emphasis placed on the need for training in science by the press, the people responding to these interviews ranked training in English and mathematics much higher for managers and employees in their business. On the other hand, training in science became increasingly important for both managers and employees to progress in the business. The tables clearly indicate the importance of training in all three of these areas for managers and workers in these businesses.

Recommendations for Further Study

1. Further study is needed of specific kinds of nonfarm agricultural business such as farm machinery, farm elevators, rural electrification, and farm drainage and irrigation to determine more specifically the re-

quirements of workers in these areas.

2. Local communities need to study the needs for training of present and prospective workers in nonfarming agricultural business. Sutherland found that requirements vary from a business in one place to a similar business in another town.
3. Further study is needed to provide complete and accurate occupational information. As more people leave the farms and farms get larger, many boys and girls will need to seek vocations off the farm. How many of them can be employed in nonfarm agricultural occupations? What training will they need for initial employment? Can they expect to advance in the business? □

Consider these—

Suggestions for Improving Your FFA

H. PALMER HOPKINS, Teacher Education, University of Maryland

H. Palmer Hopkins

PRACTICALLY all vo-ag teachers believe in the importance of the FFA. They are constantly evaluating their programs for ways to improve them. In this article, we have attempted to take a "bird's eye" view of some of the important factors that go into producing a good FFA chapter. Most of these practices have been observed by the author in several different schools. Are there some practices here that your chapter could use?

1. Have good officers.
   a. Use nominating committee from senior class. Every interested candidate should be interviewed.
   b. Elect officers in spring of year and have them work with old officers during summer.
   c. Provide leadership training before officers are installed.
   d. Have officers wear FFA ties and jackets to meetings and know ceremonial parts.
2. Plan a good program of work.
   a. As soon as new officers are elected, have them start planning next year's program of work.
   b. Have program of work presented to agriculture classes in early September for discussion and modification.
   c. Appoint committee members from the same class (example: banquet planning committee from 12th grade) so they can get together.
   d. Mimeograph program of work; distribute to every member and to all other interested people.
   e. Have officers for each large class with scheduled class time for committee work. Make each class responsible for planning certain activities.
3. Hold well planned regular meetings.
   a. Have some meetings on school time and some at night.
   b. Have executive committee meeting one week preceding the regular meeting. (How about luncheon meetings?)
   c. Use class time, when necessary, for preparing committee reports.
   d. Glamorize your meetings by:
      (1) Prominent display of paraphernalia.
      (2) Recognition of outstanding accomplishments (awards, prizes, etc.).
      (3) Use of high school music department.
      (4) Having a chapter sweetheart.
      (5) Exemplary use of parliamentary procedure.
      (6) Dignified degree work.
   e. Plan worthwhile programs:
      (1) Utilize former FFA members .
      (2) Utilize state officers.
      (3) Utilize good FFA movies.
      (4) Utilize local adults interested in FFA.
      (5) Utilize other youth leaders such as Scouts and 4-H Club leaders.
4. Initiate local activities that involve the public.
   a. Parent and son banquet or open house (might alternate).
   b. Community or school affair.
   c. Meeting for parents of first year students.
   d. Work with other organizations for community betterment.
5. Participate in regional, state and national FFA programs.
   a. Enter a limited number of contests and train thoroughly for them.
   b. Utilize former team members for training present teams.
   c. Strive for at least one state winner each year in FFA foundation awards.
   d. Have entries every year for advanced degrees.
   e. Strive to have nominees for regional and state offices.
   f. Enter the State Chapter Contest every year.
   g. Participate actively in conventions and leadership conferences.
6. Publicize your FFA.
   a. Plan special FFA Week activities and publicity.
   b. Arrange for public speaking contestant to appear before local groups.
   c. Carry on intra-school publicity—corridor displays, assemblies, school paper, etc.
   d. Submit articles to local papers.
   e. Put on radio and television programs.
   f. Display prominently in vo-ag department:
      (1) Photographs of former presidents, State Farmers, American Farmers.
      (2) Banners, plaques, cups, etc.
      (3) Names or photographs of FFA Foundation Award winners by years.

As important as the FFA is in vo-ag, a word of caution is in order. The FFA is only a part of the vo-ag program and must not be allowed to dominate or over-shadow it. Its purpose is to foster educational activities and not replace them. When properly used, it is one of our most important vehicles for education in agriculture. □

For inspiration, hold a—

Father-Son Meeting

NORMAN D. HOWE, Vo-Ag Instructor,
Minot, North Dakota

Norman D. Howe

You would have enjoyed being with a group of people like these. It was not quite the usual father and son gathering but there were similarities. For instance, there were fathers and sons present, there was a program and there was a lunch. Each of these parts of the evening had a special purpose and each was planned in a careful way, for this was a special meeting of a special group.

All the fathers of the beginning vocational agriculture students were invited and enticed to come to a special meeting held during the Christmas holidays. This time was chosen because there would be fewer conflicts and fathers and sons would be available to attend.

Careful and detailed planning was everywhere in evidence. It showed in the bulletin mailed to all parents, a bulletin that began with questions such as these:

What constitutes a total supervised farming program?
What should my boy have for a productive and improvement project?
How much control should we have of each project?
How long should these projects be?
How can I be of help to the program?

There were many other questions, but very definitely the place to come for a whole lot of answers was the special father-son meeting in the Minot FFA chapter rooms.

With this bulletin went a letter entitled, "Starting to Farm: A Letter to Dad." The letter was chock-full of information and suggestions on how the program of vocational agriculture could help the father and his son on the farm.

The program was both interesting and informative. The FFA officers opened and closed the meeting and individually welcomed each parent and made him feel at home. A past state FFA officer who is preparing to apply for the American Farmer degree told most interestingly of his personal experiences in vocational agriculture and how they led to a father-son partnership agreement on their farm. The farm representative of a local bank, a former vocational agriculture instructor, explained farm credit and how a new program of credit for FFA boys is operated at his bank.

The evening's program was corralled and tied together by the vocational agriculture instructor and there was an opportunity for questions and discussion. Then the FFA boys served a fine lunch to which each boy had made a contribution. This again showed the careful planning and attention to detail which contributed to the success of the evening. It was an expression of the belief in "delegated responsibility for increased attendance and success."

Had you been one of the participants in this evening program you would have left with the light in your eye of the student who has just learned the secret of how to do his math problems or of the salesman released from the meeting with all the latest dope and feeling that now he really has something to work on. It was a good meeting.

Already the chapter is thinking ahead to plans for a similar meeting next year, when both mothers and fathers will be invited. □

My Guidance Activities

Donald G. Robinson, Vo-Ag Instructor,
Letchworth Central School, Castile, New York

Donald G. Robinson

My guidance activities at the Letchworth Central School are an integrated part of the total guidance program. Whatever success any agriculture teacher has is dependent upon the cooperation of the administration and guidance department.

The Letchworth guidance counselor and I survey all boys in the eighth grade each year and determine the following groups:

(1) Boys from full-time farms.
(2) Boys from part-time farms.
(3) Boys interested in agriculture but not from farms.

Before enrolling any boys in agriculture we consider what alternatives the school may have to prepare each for. Some of these are:

(1) Graduate from high school and enter farming.
(2) Graduate from high school and enter related agricultural occupations.
(3) Graduate from high school and enter agriculture college.
(4) Graduate from high school and enter nonagricultural college.
(5) Leave school before graduation for farming or related agricultural occupations.

We are as concerned with the above average intelligent farm boy who should go to college but stays home on the farm as we are with the boy who must be prepared for higher education.

I work with all boys in the eighth grade interested in agriculture for at least two periods explaining the agriculture course materials and what our graduates are doing. The guidance counselor also works with these boys showing the different combinations of subjects with agriculture depending on a boy's interests and his ability to accomplish scholastic work. At this same time of year the guidance counselor has a meeting for all parents of eighth grade students to explain the school programs suggested for various vocational objectives. I attend this to help whenever possible.

Now, the real problem is what program each boy should take. The guidance counselor and I discuss each boy considering his results in school work, achievement tests and aptitude tests. Final program planning is done by the guidance counselor, the boy and his parents. In several cases each year the

guidance counselor asks me to have a conference with the boy and his parents if the counselor feels the parents do not fully understand the agricultural program. I also use the testing information in recognizing the effort being made by each boy after he enters my classes.

Boys with above average scholastic abilities can schedule at least three years of science and mathematics in addition to six units of agriculture at the Letchworth Central School. As the boy's abilities decrease, so do the extra subjects that would prepare him for college entrance.

Guidance While in Agriculture Classes

A boy as he enters agriculture is very hazy as to his adult objective and he probably will change it many times. I keep this fact before the boys while encouraging them to carry on many activities during their high school career. I encourage all boys to carry on large supervised farming programs and to develop as much equity as possible. The nearer a boy can approach farm sized problems during high school, the better he can decide his future. I try to correlate other high school courses with agriculture jobs, especially the science courses. Units on farm establishment, credit and analysis assist boys in determining their opportunities and abilities in farming, related agriculture or professional agriculture.

Future Farmer activities such as judging contests, chapter meeting contests, public speaking, attendance at Future Farmer camp, attendance at state and national conventions, and attending Farm and Home Week at Cornell have done much to keep college entrance before the students. The fact that many Letchworth graduates have done well at the College of Agriculture certainly encourages more boys to follow in their footsteps.

The success of this program can be evaluated by these facts in the classes of 1954 through 1959:

(1) Fourteen boys have gone on to college.

(2) Sixteen boys have become Empire Farmers.

(3) Of those boys graduating and not in college or military service, only seven have left agricultural occupations.

Suggestions to Beginning Teachers

1. Recognize that the guidance counselor has a very important duty to perform and try to help him.
2. Set up a teaching program that trains boys' minds and carry it through.
3. Try to recognize each boy's abilities and interest. Never attempt to fit all boys into the same pattern.
4. Invite the guidance counselor to banquets and other Future Farmer activities.
5. Use the guidance counselor as chaperone on trips to state colleges.
6. Become acquainted with state college admissions personnel and the college's entrance policies.
7. Work with your agricultural advisory board and young farmer group showing farm establishment possibilities.
8. Work with higher education encouragement groups from your state college.
9. Join the local groups working on student loan funds.

These are some of the policies, ideas and activities that I have carried on. Some of them will work for you.□

Supt. Loughead writes—

A Letter to Congressman Jones

Mr. Paul C. Jones
Member of Congress
Tenth District of Missouri
Washington, D. C.

Dear Mr. Jones:

I appreciate your comments on the general proposals of Federal Aid to education. Also, I appreciate your request concerning my views on this much debated subject. I apologize for being tardy with my reply. Your request is of such nature that I could not make even the beginnings of a satisfactory reply without considerable study. I hope you will pardon the length of my remarks but a short reply would not be of much value.

As a major beginning premise I believe that Federal Aid to education in a substantial form must come if the entire United States is to move forward in achievement in education as is now being demanded by most of the prominent critics of our educational procedures. The amount and direction of this substantial aid would still be a matter of great controversy and would need much study. I feel that a large amount of the opposition and misgivings of able leaders in various phases of our national life toward Federal Aid to education is because there is an insufficient understanding of the economic and social changes which have occurred in the United States since the legal bases and local ways of conducting education were established, in many instances now more than two hundred years old. We must recognize that we are operating our schools under a fundamental philosophy of law and custom dating back to a time of comparatively simple organization of community life in our country. So far as I know there has never been a really thorough study of the economic and social changes in our country as they apply to the quality and type of education which all the youth should receive. Too many people still speak glibly of education as a local problem. We speak of the local school system. You are thoroughly acquainted with education in Missouri. Really we do not have a local school system. We have a state school system. So far as I know most states have a state system. Certain administrative procedures are delegated to the local district but in total effect the local district operates as a part of the state system. As the complexity of our problem increases, the state control increases. In the time of George Washington about 90% of the American people made a living directly from agriculture. Presently some 9 to 12% of the employed people are supplying most of the agricultural products of this country. Agricultural economists are now telling our Vocational Agricultural Departments that if the technology of production continues to be developed at the same

rate as in recent years that not over 5 or 6% of the employed people of the United States will be required to produce the food needed by our country. This has produced a tremendous shift in population. The shift is still continuing. This shift in population brings tremendous changes in the locations of earnings and wealth. The sources of earnings and wealth become widely separated from the land, the mines, the forests and the fisheries from which the original raw products come. I think it is now just as fallacious to say that education can properly be supported through state and local taxes by each state as it would be to argue that rivers, harbors, highways, water pollution, epidemics of human, animal and plant diseases and many other things can be controlled on a state and local level.

All over the United States magazines and newspapers in editorial policy and feature articles make severe attacks on the philosophy of federal aid to education. Large and influential organizations also oppose the principle of federal aid to education. Many prominent leaders in the civic, political, business and professional activities of the United States are in opposition. Yet, practically without exception, the same organizations and individuals will cheerfully work for and accept federal aid for their organization or locality in the form of support for highways, slum clearance, river and harbor improvement, disease prevention and control, local aid in disasters such as flood, drought or tornado, and in many other ways. These organizations and individuals will send committees and delegations to Washington to plead with the Congress and with various federal agencies to gain financial support for their particular interests. Are not the highways of the minds of boys and girls just as worthy of national support as the material programs which many communities now seek and accept as a matter of course from the federal government?

You mention that you are disturbed by a statement by an official of the NEA of a proposed goal of 20 pupils per teacher. Again I have no objective data to show how many pupils one teacher can adequately teach. Please accept this one statement. Most school people sincerely wish to do the best job of teaching they possibly can. This good job will require able teachers, desirable physical surroundings, suitable teaching materials and a suitable number of pupils per teacher. Not long ago I met a school patron of the Poplar Bluff School District in the corridor of our high school. I knew that he had a son who had entered the University of Missouri in September of this year. I asked about the progress of his son. He replied that the progress was satisfactory except that he was having some trouble in American History. He then said that his son's class in American History contained more than 350 pupils. I have a report that the largest class in American History in the University of Missouri the first semester of this school year had 458 pupils. I cannot conceive that these college freshmen can truly be taught fundamental concepts in American History under such circumstances. If they will read the references they may pick up some isolated facts. I know you have heard the definition of a college, "Mark Hopkins on one end of a log and the pupil on the other end." If this philosophy has some merit then the log for American History at the University of Missouri is too long. Somewhere between Mark Hopkins and one pupil and the 350 odd pupils should be an optimum number of pupils for satisfactory teaching conditions.

One of the truly basic problems in financing education by local taxes is that all of this tax must come from property. As pointed out above, wealth and earnings have now become widely separated from the property which produces the raw products of our industry. The timber products of Butler County are needed in American industry. The worker who takes the timber from the forest and starts it into industry has a relatively low wage. He has not much wealth to tax. The worker who produces cotton, corn, wheat, hay and beans in Southeast Missouri gets a relatively low wage. The maximum value of these products is finally realized in a metropolitan center far removed from Southeast Missouri. Payments on insurance, telephone bills, automobiles, refrigerators, etc., help pay taxes in large metropolitan centers. A much overlooked factor in so-called local support of education comes in at this point. Communities such as Poplar Bluff and other Southeast Missouri communities have mostly raw products but the support costs of our schools, teacher's wages, building materials, supplies for operating a school, are all set by metropolitan centers. Not so very many years ago it was still possible for an eighth grade graduate to take an examination and commence teaching the following September. This type of a school could be conducted on local resources.

Actually, federal support in many of the areas which affect the welfare of our people is not an encroachment on local activity. Local activity now encompasses an area many, many times larger than the old local community of shouting distance, walking distance or horse and buggy distance. In this old time locality governed by the travel distance of a horse and buggy the men used to organize themselves into groups for a week or so during the summer and "work" the roads. It has been a long time since I have heard anyone lament the disappearance of this local activity and its assumption by the state and federal government. The United States is growing up. Individual responsibility is just as great as ever but the area for its action is much larger than in the so-called "good old days."

The school levy in the Poplar Bluff School District is $4.15. Even on that levy Poplar Bluff cannot compete with the metropolitan centers for new teachers. Personally, I think that some type of federal support per pupil enrolled and some building aids offer the most desirable solution. I believe the argument that federal aid means federal control is largely a manufactured argument. People who use that argument do not realize that for many years the federal government has given substantial aids to education and to schools—without federal control.

Also, we have a considerable block of people who do not believe in very much state support for education and they include federal support as part of state support. This group includes some very influential and able people. They are very clever and will not publicly go on record as being opposed to state support of education. However, in their hearts, they think of educational opportunity as belonging to the privileged few, the wealthy class, the ruling class. They feel that education beyond an elementary minimum should be paid for by the families of the people being educated. I believe legislation can be framed so that federal support can permit the type of education which each community needs. Dr. Conant in his fine report on the American high school stated that the educational program

for the individual should be tailored to his own needs. This can be extended into a statement that each community should have a program of education adjusted to the needs of that community. It is ridiculous to say that LaDue Village or Clayton in St. Louis County, or Hillsdale, Illinois, or Scarsdale, New York, should have the same educational program as Poplar Bluff or Kennett or vice versa. I repeat again that I believe that a federal aid program can be framed which will permit each individual community to have a sound and excellent program suited to its own needs.

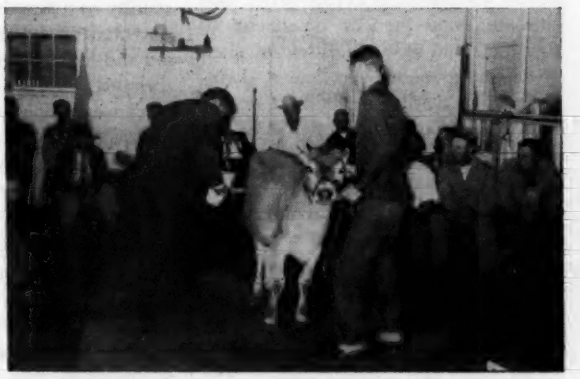
One other comment as to class size. Here again enters one of those nebulous statements which sounds well but has very little meaning in practice. I refer to the so-called "mass" education. While certain types of information and instruction can be given to rather large groups of children yet, if misunderstanding occurs, then the misunderstanding must be corrected by individual attention. This is especially true in arithmetic, English grammar and construction, in basic concepts in chemistry, physics, biology and in many other fields of learning. An error in grammar is an individual thing and will be corrected in the thinking of the pupil by individual attention from the teacher. A boy who sets up a job in a lathe incorrectly will be helped only by individual attention by the instructor. Dr. Conant stated that English teachers should not have more than 100 pupils per day in their classes. Here he is actually referring to the fact that errors in English can be corrected only by the teacher having enough time for individual attention to pupils.

I know that you Congressmen have a big problem to face in this matter. I am one who sincerely appreciates the honest thoughtful appraisal of the problem that men such as you are giving to the matter. Solutions will be found by having correct information, not by personal feelings.

With very best personal good wishes, I am

Sincerely yours,

George R. Loughead
Superintendent of Schools
Poplar Bluff, Missouri □



Helping Farmers Keep Up-To-Date

THOMAS V. ABERCROMBIE, Vo-Ag Instructor, Missouri City, Texas

The Fort Bend Farmers and Ranchers Club, formerly the Fresno Farmers and Ranchers Club, came into being in response to a need on the part of farmers to keep current on agricultural developments. It also served a secondary need—that of providing for a period of fellowship for members of the community. Since its inception eleven years ago, the club has held regular monthly meetings. The programs have consisted of material relating to farming and ranching with occasionally a session being devoted to recreational activities.

An outstanding feature of the Fort Bend Farmers and Ranchers Club is that, in addition to being the regular type of adult class, it is an action agency. For example, the club cooperates with the Farm Bureau. At regular club meetings resolutions are adopted for submission through the Farm Bureau channels. An officer of the club has also been president of the County Farm Bureau. The club does not hesitate to inform its congressmen and senators as well as local and county officials about farm problems in which it is interested.

To help the members keep up-to-date the club uses an advisory council who, with the instructor, plan the monthly programs on a six months basis. Should an emergency arise the current problem could replace the item originally scheduled.

During the past eleven years the club has had on its program many of the top agricultural personnel in Texas. These individuals present information on a topic selected by the club. At times some individual has been secured to conduct a series of meetings on a vital topic. Following the instructional periods, it is the policy of the group to put into use those phases of instruction which fit the individual farming programs.

In addition to the regular meetings of the club, a variety of media are used to help the farmers and ranchers keep current. The agricultural department publishes a monthly newsletter. The radio, TV, and newspaper are also utilized. Field trips are made to important farming and ranching properties, to experiment stations and to the Land Grant College.

We believe that giving the farmers information they need, providing fellowship and carrying instruction to the doing level are conducive to an active adult program. □

New responsibilities—

Vo-Ag Leadership In Community Development

PAUL ROY[1] and SAM DALE[2]

Vocational agricultural education is being challenged on many fronts in this "space" age. One such challenge exists in communities where land and capital resources are insufficient to provide farming opportunities for all or a substantial number of farm boys and girls. The usual case is that these boys and girls are educated at great expense to the community but then leave it immediately upon graduation. In turn, the community gets older and businesses in that area become stagnant. This, in turn, lends further impetus to out-migration with the ultimate consequences disastrous to all groups and individuals within, such as declining school enrollment, dwindling vocational agriculture enrollment, declining trade and business opportunities plus lowered morale among the citizenry.

Can the vo-ag department provide leadership for these communities? The authors insist that it can and it must if vo-ag is to achieve its ultimate goal of contented, prosperous and expanding rural communities. But, the shopworn concepts and approaches previously successful may have to be challenged.

The Sicily Island Community in Catahoula Parish, Louisiana, exhibited some of the characteristics cited above as do thousands of others in rural America today. In a pilot effort to determine if economic improvement could be made under such conditions, the local vo-ag department and the Department of Agricultural Economics at L.S.U. teamed-up to see what might be done, mainly as a trial-run to show the opportunities and pitfalls of such an approach. Actually, the united effort emerged from a Rotary Club sponsorship in which the high school principal, J. R. Peace, played a key role. Business, town and rural people agreed that joint thinking along these lines was urgently necessary. The vo-ag teacher (Mr. Dale) was instrumental in cementing relations among the groups through his leadership. A Farm and Town Association was organized to stimulate thinking and channel work assignments.

One hypothesis of the study was that if farming opportunities were limited then related farming activities might be expanded. Vo-ag could provide the teaching, leadership and zeal to retain some of the farm boys in such related endeavors. The first task was to conduct a survey of the community to determine the resources and potential of the area. About 75 farmers and town people were interviewed through efforts of the vo-ag department, local farmer-leaders and L.S.U. agricultural experiment station workers. The survey was short and to the point. It was very inexpensive and summaries were prepared within a month of the starting date.

For example, the survey on the business situation revealed that over a ten-year period the community had had the same number of businesses in operation with declines in theater, drugstores, cafes and retail shops. Automotive shop work offset that partially. Cotton ginning and sawmills declined in importance. Sand and gravel activity offset that loss. Also, trade was by-passing the community and going to the larger towns, especially county seat towns. The local town itself was not keeping up with more improved municipal services such as sewerage, natural gas and water. Land for orderly subdivision development and retail shopping centers was not being zoned or made available for these purposes. Hunting and fishing accommodations as recreational activities were suggested.

This example is not given to appear critical but illustrates that part of many vo-ag difficulties may be traced to municipal and township deficiencies and not altogether to the vo-ag program in determining why so many youngsters do not remain on farms or in businesses allied with farming. This showed that vo-ag leadership and responsibility may be wider than we have been led to believe. In the future, the vo-ag instructor may have to become more involved with all aspects of community life and community economics if his program is to survive.

Next, the on-farm survey revealed that tremendous opportunities existed for undertakings which were allied with vo-ag and farming. In anticipation of further research, the L.S.U. report recommended, among other things, a cooperative cattle feedlot in which some local grain and local feeder cattle could be grain-fed either fully or supplementary to grazing operations. In conjunction with this, a feed mixing mill using prepared concentrates and grain (local or imported) was recommended. A hog program was also outlined in which feeder pig and hog finishing operations were to be divorced. The reason was that about ten part-time farmers working at lumber plants and enrolled in the young farmer class wanted only to feed and finish-out hogs in parlors. Thus, the vo-ag program involved immediately these men who otherwise might have been disinterested in vo-ag. They could now become its biggest boosters. Part-time farmers, because they have access to capital, often are easier to work with than full-time farmers.

It was recommended that cotton be retained to the limit of the allotments but better management assistance through vo-ag by accurate cost records was recommended. More emphasis on corn, oats, milo and soybeans was recommended. Because local farmers were having to travel some distance to buy farm supplies and at high cost, a co-op purchasing organization was recommended. The local vo-ag department would benefit by this development also as it would provide some opportunity for boys to learn and work in the farm supply business. This recommendation to organize a co-op was the first one acted upon by the community. More details shall be presented on this endeavor shortly.

All in all, every single recommendation made either for the town or rural area involved the local vo-ag department as well as other farm agencies and town businesses for its complete success. At the end of the survey, it was concluded that vocational agriculture would be indispensable if the community wanted to go ahead as it had the opportunity to do. This was in sharp contrast to the pessimism

---

[1]Associate Economist, La. Ag. Exp. Sta., Baton Rouge, Louisiana, (Former President, Louisiana FFA Association) (1944-46) and "American Farmer" degree (1946).

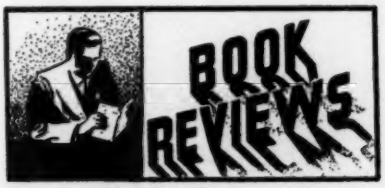
[2]Vo-Ag Instructor, Sicily Island, Louisiana. (Chapter awarded Bronze and Silver Chapter Emblem awards on several occasions).

which formerly prevailed concerning the community's future. One thing did stand out, however. If vo-ag was to be indispensable, it would have to comply with changing needs. This community, like many others, needs only a very few farmers each year but it did need a large supply of farm boys skilled in both farm practices, shop training and related occupations such as feed mixing, feed sales, medicinal sales, marketing, grain storage, etc. College graduates are not always necessary in some of these jobs either. One problem for the boy who wants to enter farming is the high cost of equipment and unavailability of land. More importantly, adult and young farmer education appeared very crucial in such areas so that people could learn to think about and achieve satisfactory economic adjustments. Part-time farmers need counsel and advice. In turn, they can lend tremendous support to farm agencies and vo-ag by telling their fellow city workers how good a job professional agriculture workers are doing for everyone.

About three months after the conclusion of the study and of the report to the community, the Young Farmer Class and the Town and Farm Association combined to organize a farm supply co-op. A mass meeting of the community was called by the vo-ag teacher and the proposal for the co-op was thoroughly discussed. The decision to organize was made and three of the ten Board of Director members came from the Young Farmer Class in vocational agriculture. Capital was raised and a charter adopted as outlined for the community by co-op researchers at Louisiana State University. The secretary-treasurer of the original Town and Farm Association became the co-op's first manager.

The original objective both to bring business to the town and strengthen agriculture was partially achieved by renting the unused theater building in town and re-modeling it for a farm supply co-op office and warehouse. The town had gained a new business, a payroll, new visitors and buyers to a once dying community.

Farmers both large and small had gained control of their own supply business which included feed, seed, fertilizer, tires, veterinary supplies, hardware items, chemicals and other items. Everyone agreed that this was just the beginning of a better future for the community, the farmers and vocational agriculture. Other recommendations made for the community as a result of the community survey could then be implemented more successfully with a co-op. Members are looking forward with great interest in putting these recommendations into practice. □



ANATOMY OF SEED PLANTS: AN INTRODUCTORY WORK OF PLANT ANATOMY, by Katherine Esau. John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, New York. 376 pp., illustrated. 1960. Price $6.75.

This is a new book, written as a short and concise text for a one-semester college course on plant anatomy. It would be an excellent reference for the teacher of agriculture interested in plant cells and tissues as they relate to the anatomy of the plant.

The book was written primarily for students who have had limited experience in the study of plants. It includes 22 chapters, in a logical sequence. The plant cells and tissues are discussed first, and then the plant parts composed of these cells and tissues.

The subject matter is up to date. Related references are included at the end of each chapter. The book is well illustrated and includes a very helpful glossary, in the Appendix.

A laboratory guide, to accompany this text, has been prepared by the author and is available from the publishers of the text. It has 32 pages and is priced at $.75.

Katherine Esau is Professor of Botany at the University of California at Davis. In 1956 she was awarded the Certificate of Merit by the Botanical Society of America, and in 1957 was elected to the National Academy of Science.

Carl F. Lamar,
Teacher Education,
University of Kentucky

PRINCIPLES OF DAIRY CHEMISTRY by Robert Jenness and Stuart Patton. John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 446 pp., illustrated. 1959. Price $8.75.

This book has been written to meet the needs of food and dairy technologists specializing in the principles of dairy chemistry. Main emphasis is directed toward understanding the nature of milk including the chemistry of milk constituents, the interaction of constituents with one another under various conditions, and the relationship of all these facts to the production and storage of dairy products.

Other sections of this text describe how to perform analysis and tests on milk, milk constituents and milk products. Considerable detail is given in explaining the physical-chemical principles involved and the various merits and limitations of such procedures. A special chapter deals with the nutrition of milk.

The book is designed as a college textbook for teaching principles of basic dairy chemistry, and the material is based on a knowledge of organic and inorganic chemistry and biochemistry. Teachers may find this book a helpful reference.

Mr. Jenness is Professor of Agricultural Biochemistry, University of Minnesota; and Mr. Patton is Associate Professor Dairy Science, Pennsylvania State University.

Denver B. Hutson,
Teacher Trainer,
University of Arkansas

YOUR FUTURE IN POULTRY FARMING by John W. Goodman and David C. Tudor. Prentice-Hall, Inc., Englewood Cliffs, N. J. 412 pp., illustrated. 1960. Price $5.25.

This book discusses many of the problems met by poultry producers and presents current information on recommended methods of managing poultry enterprises. It also contains warnings of difficulties the poultryman may meet. Written in language high-school students and farmers can readily understand, this will increase the interest in the poultry business of anyone who reads it. It is well illustrated. Its value for classes in vocational agriculture is enhanced by the listing of appropriate questions and class and community activities at the end of each chapter.

In preparing the book, the authors secured advice and assistance from several of the foremost authorities in poultry husbandry and agricultural education.

John W. Goodman is teacher of science at Middletown, New Jersey and David C. Tudor is Associate Research Specialist in Poultry Pathology at Rutgers University, New Brunswick, New Jersey.

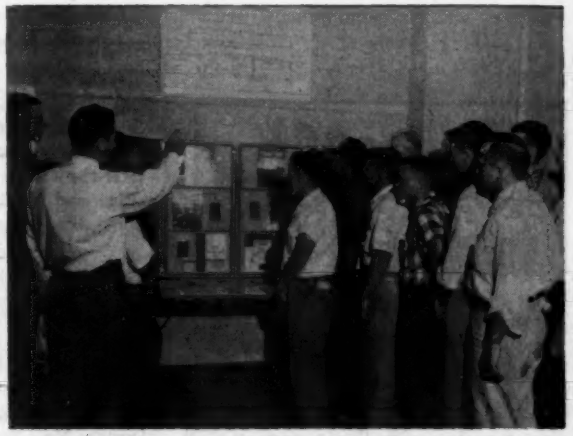
B. C. Bass,
Teacher Education,
Virginia

Bradford Berry, Tolt-Carnation FFA, Carnation, Washington, with evidence of his FFA activities. Not shown are two coat-sweaters received from the Washington Cooperative Farmers Association as special awards, a $300.00 scholarship from the Standard Oil Company, and several judging awards. Bradford lives in town with his parents, Mr. and Mrs. Myron Berry, on less than two acres, most of which is in lawn and fruit trees. His FFA projects have included beef steers, dairy heifers, sheep, a crop, farm placement at the Carnation Milk Farms, and of course many improvement projects and supplementary practice. (R. D. Walen, Vo-Ag Instructor)

Stories in Pictures

California's agricultural teachers chose this quartet of new officers to head the 500-member California Agricultural Teachers' Association next year. Election was held at the conclusion of the annual conference today on the San Luis Obispo campus of California State Polytechnic College. Left to right: Roland Wentzel of Fortuna, secretary; Jack Evans, Madera, vice president; Richard Havens, Brentwood, treasurer; and Holger Hansen, Bakersfield, president. (Cal Poly photo)

S. V. Burks, Texas A & I College; J. L. Moses, Sam Houston State Teachers College; and Ray Chappelle, Texas Tech, were recognized for outstanding service to agricultural education at the Southern Regional Conference held in Oklahoma City, April 4-8. The influence these three men have had on agriculture teachers will be felt for many years to come.



One of the features of the Ohio Vocational Agriculture Teachers Conference which was held June 13-15 at the Ohio State Fair Youth Center was an exhibit of teaching aids which teachers had made during the past year. Forty-six teachers participated in this year's exhibit. (Photo by Ralph J. Woodin)

Officers of the Arizona Vocational Agriculture Teachers Association —past and present. Left to right: Vincent Salmon, Benson Union High School, Benson, Vice President; Robert Tilt, Peoria High School, Peoria, past Secretary-Treasurer; Wendall Smith, Phoenix Union High School, Phoenix, President; Paul W. Vance, Chandler High School, Chandler, Past President and Leo Peterson, Mesa High School, Mesa, Secretary-Treasurer. (Photo by R. W. Cline)